JAN McLIN CLAYBERG
PATENT AND TECHNICAL TRANSLATION

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CERTIFIED BY AMERICAN TRANSLATORS ASSOCIATION
*GERMAN AND FRENCH TO ENGLISH
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DECLARATION

The undersigned, Olaf Bexhoeft, hereby states that he is well acquainted with both the English and German languages and that the attached is a true translation to the best of his knowledge and ability of claims 1 to 49 of PCT/DE2003/03527, filed 10/23/2003.

The undersigned further declares that the above statement is true; and further, that this statement was made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or document or any patent resulting therefrom.

Olaf Bexhoeft

Claims

1. A rotary body (01) of a printing press with a barrel (02), wherein the barrel (02) has at least one channel (14, 16, 21, 29), through which a temperature-control medium flows and which has at least one inflow (08) and one outflow (09) for the temperature-control medium, wherein the temperature-control medium exchanges an amount of heat with the barrel (02) over a distance (s) between the inflow (08) and the outflow (09), wherein the barrel (02) has a base body (17) and an outer body (19) placed radially downstream of the base body (17), wherein the channel (14, 16, 21, 29) is open toward the inside (24) of the outer body (19), characterized in that an insert which thermally insulates the temperature-control medium against the base body (17) is arranged in the channel (14, 16, 21, 29) at least over the distance (s).

2. The rotating body (01) in accordance with claim 1, characterized in that the channel (14, 16, 21, 29) is arranged in the surface (18) of the base body (17), in the inside (24) of the outer body (19), or in a space (27) resulting between the surface (18) of the base body (17) and the inside (24) of the outer body (19) because of a distance (a19) of the inside (24) of the outer body (19) from the surface (18) of the base body (17).

3. The rotating body (01) in accordance with claim 2, characterized in that the channel (14, 16, 21, 29) has been cut

into the surface (18) of the base body (17) or into the inside (24) of the outer body (19) by milling.

4. A rotary body (01) of a printing press with a barrel (02), wherein the barrel (02) has at least one channel (14, 16, 21, 29) through which a temperature-control medium flows and has at least one inflow (08) and one outflow (09) for the temperature-control medium, wherein the temperature-control medium exchanges an amount of heat with the barrel (02) over a distance (s) between the inflow (08) and the outflow (09), wherein the barrel (02) has a base body (17) and an outer body (19) placed radially downstream of the base body (17), wherein the channel (14, 16, 21, 29) is thermally insulated against the base body (17), at least along the distance (s), by a thermal insulating material arranged between the surface (18) of the base body (17) and the inside (24) of the outer body (19), characterized in that the channel (14, 16, 21, 29) is formed in the insulating material.

5. The rotating body (01) in accordance with claim 4, characterized in that the channel (14, 16, 21, 29) is open toward the inside (24) of the outer body (19).

6. The rotating body (01) in accordance with claim 4, characterized in that the channel (14, 16, 21, 29) has a bottom toward the surface of the base body (17).

7. The rotating body (01) in accordance with claim 4, characterized in that at least one guide surface (28) for the temperature-control medium flowing through the channel (14, 16, 21, 29) is formed in the insulating material.

8. The rotating body (01) in accordance with claim 4, characterized in that the channel (14, 16, 21, 29) in the insulating material is formed by means of casting techniques.

9. The rotating body (01) in accordance with claim 4, characterized in that the insulating material encloses the base body (17) at least partially.

10. The rotating body (01) in accordance with claim 4, characterized in that the insulating material encloses the base body (17) in the form of a cylinder.

11. The rotating body (01) in accordance with claim 4, characterized in that the thermal coefficient of expansion of the insulating material is matched to that of the material of the base body (17) and the outer body (19).

12. The rotating body (01) in accordance with claim 4, characterized in that hollow glass bodies have been sprinkled into the insulating material.

13. The rotating body (01) in accordance with claim 4, characterized in that the insulating material is introduced into the space (27) between the surface (18) of the base body (17) and the inside (24) of the outer body (19) by casting.

14. The rotating body (01) in accordance with claim 4, characterized in that the insulating material forms a cylindrical sleeve (38) enclosing the base body (17), wherein the sleeve (38)

has been inserted into the space (27) between the surface (18) of the base body (17) and the inside (24) of the outer body (19).

15. The rotating body (01) in accordance with claim 14, characterized in that the sleeve (38) is made of plastic by means of an injection-molding method.

16. The rotating body (01) in accordance with claim 14, characterized in that the channel (14, 16, 21, 29) is formed on the exterior of the sleeve (38).

17. The rotating body (01) in accordance with claim 14, characterized in that the channel (14, 16, 21, 29) is produced by injection-molding.

18. The rotating body (01) in accordance with claim 1 or 4, characterized in that the temperature-control medium flowing through the channel (14, 16, 21, 29) exchanges the amount of heat substantially only with the outer body (19).

19. The rotating body (01) in accordance with claim 1 or 4, characterized in that the distance (s) between the inflow (08) and the outflow (09) corresponds at least to one print-producing area along a length (L) of the barrel (02).

20. The rotating body (01) in accordance with claim 1 or 4, characterized in that the channel (14, 16, 21, 29) is oriented parallel with the axis of the base body (17).

21. The rotating body (01) in accordance with claim 1 or 4, characterized in that the channel (14, 16, 21, 29) winds around the base body (17) in a helical manner.

22. The rotating body (01) in accordance with claim 1 or 4, characterized in that the amount of heat exchanged between the temperature-control medium and the outer body (19) is substantially constant because of the matching of the flow speed (v08, v09) of the temperature-control medium along the distance (s).

23. The rotating body (01) in accordance with claim 1 or 4, characterized in that the opening of the channel (14, 16, 21, 29) oriented toward the inside (24) of the outer body (19) forms a contact surface (A07) with the inside (24) of the outer body (19) for the temperature-control medium flowing through the channel (14, 16, 21, 29).

24. The rotating body (01) in accordance with claim 23, characterized in that the contact surface (A07) along the distance (s) is constant in its geometry or its distance from the shell face (07).

25. The rotating body (01) in accordance with claim 23, characterized in that an amount of heat to be exchanged between the temperature-control medium and the outer body (19) along the distance (s) is constant by means of a change of the contact surface (A07) or its distance from the shell face (07).

26. The rotating body (01) in accordance with claim 1 or 4, characterized in that a cross-sectional surface (A09) of the channel (14, 15, 21, 29) at the side of the distance (s) facing the outflow (09) differs from a cross-section surface (A08) of the channel (14, 15, 21, 29) at the side of the distance (s) facing the inflow (08).

27. The rotating body (01) in accordance with claim 1 or 4, characterized in that a depth (t09) of the channel (14, 15, 21, 29) at the side of the distance (s) facing the outflow (09) differs from a depth (t08) of the channel (14, 15, 21, 29) at the side of the distance (s) facing the inflow (08).

28. The rotating body (01) in accordance with claim 1, characterized in that the insert is placed into the channel (14, 15, 21, 29) in a material-to-material connected, or positively connected manner.

29. The rotating body (01) in accordance with claim 1, characterized in that the insert placed into the channel (14, 15, 21, 29) changes the cross-sectional surface (A08, A09) of the latter.

30. The rotating body (01) in accordance with claim 1, characterized in that the insert is embodied to be wedge-shaped.

31. The rotating body (01) in accordance with claim 1, characterized in that the insert is embodied as a rod.

32. The rotating body (01) in accordance with claim 1, characterized in that the insert has been glued into the channel (14, 15, 21, 29).

33. The rotating body (01) in accordance with claim 1, characterized in that the insert has been introduced by means of a press fit into the channel (14, 15, 21, 29).

34. The rotating body (01) in accordance with claim 1, characterized in that the insert has been introduced by means of a molding process or an injection-molding process into the channel (14, 15, 21, 29).

35. The rotating body (01) in accordance with claim 1, characterized in that the insert is made of a thermal insulating material.

36. A rotating body (01) of a printing press, having a barrel (02), wherein the barrel (02) has a base body (17) and an outer body (19) placed radially downstream of the base body (17), wherein a thermal insulating material is arranged between the base body (17) and the outer body (19), characterized in that the insulating material cylindrically encloses the base body (17).

37. A rotating body (01) in accordance with claim 36, characterized in that the barrel (02) has at least one channel (14, 16, 21, 29), through which a temperature-control medium flows, which has at least one inflow (08) and one outflow (09) for the temperature-control medium.

38. The rotating body (01) in accordance with claim 37, characterized in that the temperature-control medium exchanges an amount of heat with the barrel (02) along a distance (s) between the inflow (08) and the outflow (09).

39. The rotating body (01) in accordance with claim 38, characterized in that the channel (14, 16, 21, 29) is thermally insulated against the base body (17) by the insulating material at least along the distance (s).

40. The rotating body (01) in accordance with claim 4, 35 or 36, characterized in that the insulating material is castable.

41. The rotating body (01) in accordance with claim 4, 35, or 36, characterized in that insulating material is a synthetic resin.

42. The rotating body (01) in accordance with claim 4, 35, or 36, characterized in that the insulating material has sprinkled-in hollow glass spheres.

43. The rotating body (01) in accordance with claim 1, 4 or 36, characterized in that on its outside the outer body (19) forms the shell face (07) of the barrel (02), on which at least one dressing can be placed.

44. The rotating body (01) in accordance with claim 1, 4, or 36, characterized in that the outer body (19) is massively embodied.

45. The rotating body (01) in accordance with claim 1, 4, or 36, characterized in that the outer body (19) is embodied as a curved element, which at least partially encloses the surface (18) of the base body (17).

46. The rotating body (01) in accordance with claim 45, characterized in that the curved element has a central angle (α) of less than 360°.

47. The rotating body (01) in accordance with claim 45, characterized in that several curved elements, each having at least one channel (14, 16, 21, 29), are arranged on the surface (18) of the base body (17) in the direction of the circumference (U), wherein the central angles (αi, wherein i is a counting index of the curved elements) which are part of the curved elements, complement each other to at most 360°.

48. The rotating body (01) in accordance with claim 1, 4, or 36, characterized in that the rotating body (01) is embodied as a forme cylinder (01) or a transfer cylinder (01).

49. The rotating body (01) in accordance with claim 1, 4, or 36, characterized in that the rotating body (01) is embodied as a roller (01) in an inking unit.